

IN THE CLAIMS:

1.-18. (Canceled)

19. (Currently Amended) A bioadhesive composition formed by polymerising a homogeneous aqueous reaction mixture comprising from about 5% to about 50%, by weight of the reaction mixture, of at least one ionic water soluble monomer, from about 10% to about 50%, by weight of the reaction mixture, of at least one plasticiser which is not water, up to about 50%, by weight of the reaction mixture, of at least one non ionic water soluble monomer, up to about 40%, by weight of the reaction mixture, of water, up to about 10%, by weight of the reaction mixture, of at least one surfactant and from about 1% to about 30%, by weight of the reaction mixture, of at least one hydrophobic monomer and/or polymer, said composition comprising a polymerised material having a hydrophobia phase and a hydrophilic phase, wherein at least one of said hydrophobic and hydrophilic phases exists as discrete regions within said polymerised material and both phases do not simultaneously extend across the polymerised material.

20. (Original) A bioadhesive composition formed by providing a homogenously dispersed reaction mixture comprising both hydrophobic and hydrophylic components and polymerising said homogenously dispersed reaction mixture such that on polymerisation the reaction mixture separates into a biphasic or multiphasic structure at least at a surface of the bioadhesive composition.

21. (Previously Amended) A bioadhesive composition as claimed in claim 20, wherein the bioadhesive composition comprises effective amounts of at least one ionic water soluble monomer, at least one plasticiser which is not water, at least one non ionic water soluble monomer, water, at least one surfactant, and at least one hydrophobic monomer and/or polymer.

22. (Previously Amended) A bioadhesive composition as claimed in claim 20, wherein the said reaction mixture comprises from about 5% to about 50% by weight of the reaction mixture of at least one ionic water soluble monomer, from about 10% to about 50%, by weight of the reaction mixture, of at least one plasticiser which is not water, up to about 50%, by weight of the reaction mixture, of at least one non ionic water soluble monomer, up to about 40%, by weight of

the reaction mixture, of water, up to about 10%, by weight of the reaction mixture, of at least one surfactant and from about 1% to about 30%, by weight of the reaction mixture of at least one hydrophobic monomer and/or polymer.

23. (Original) A bioadhesive composition as claimed in claim 19, characterised in that the composition provides adhesion of at least 0.35 N/cm on greasy skin of the type defined in tests herein.

24. (Original) A bioadhesive composition as claimed in claim 19, characterised in that the composition provides adhesion on dry skin at no less than 0.5 N/cm.

25. (Original) A bioadhesive composition as claimed in claim 19, characterised in that said ionic monomer comprises an acrylate based monomer.

26. (Original) A bioadhesive composition as claimed in claim 19, characterised in that said ionic monomer comprises any of 2-acrylamido-2-methylpropane sulphonic acid, an analogue thereof or a salt thereof.

27. (Original) A bioadhesive composition as claimed in claim 19, characterised in that the reaction mixture comprises from about 30% to about 50%, by weight of the reaction mixture, of said ionic monomer.

28. (Original) A bioadhesive composition as claimed in claim 19, characterised in that said plasticiser comprises any of the following either alone or in combination: at least one polyhydric alcohol, at least one ester derived from polyhydric alcohol and at least one polymeric alcohol.

29. (Original) A bioadhesive composition as claimed in claim 19, characterised in that said plasticiser comprises at least one of glycerol and an ester derived from boric acid and glycerol.

30. (Previously Amended) A bioadhesive composition as claimed in claim 19, characterised in that the bioadhesive composition comprises from about 15% to about 45%, by weight of the reaction mixture of said plasticiser which is not water.

31. (Original) A bioadhesive composition as claimed in claim 19, characterised in that the non ionic water soluble monomer comprises at least one of a mono- or dialkylacrylamide or an analogue thereof.

32. (Original) A bioadhesive composition as claimed in claim 19, characterised in that said non ionic water soluble monomer comprises at least one of N,N-dimethylacrylamide or an analogue thereof.

33. (Original) A bioadhesive composition as claimed in claim 19, characterised in that the reaction mixture comprises from about 15% to about 25%, by weight of the reaction mixture, of said non ionic water soluble monomer.

34. (Original) A bio adhesive composition as claimed in claim 19, characterised in that the reaction mixture comprises from about 0.1% to about 5%, by weight of the reaction mixture, of said surfactant.

35. (Original) A bioadhesive composition as claimed in claim 19, characterised in that said surfactant comprises one or more non ionic surfactants.

36. (Original) A bioadhesive composition as claimed in claim 19, characterised in that the surfactant comprises one or more anionic surfactants.

37. (Original) A bioadhesive composition as claimed in claim 19, characterised in that the surfactant comprises one or more cationic surfactants.

38. (Original) A bioadhesive composition as claimed in claim 19, characterised in that the surfactant comprises at least one propylene oxide/ethylene oxide block copolymer.

39. (Original) A bioadhesive composition as claimed in claim 19, characterised in that the reaction mixture further comprises at least one lipid micellising polymer.
40. (Original) A bioadhesive composition as claimed in claim 39, characterised in that the reaction mixture comprises from about 0.1% to about 5%, by weight of the reaction mixture, of lipid micellising polymer.
41. (Original) A bioadhesive composition as claimed in claim 39, characterised in that the lipid micellising polymer comprises any of the following either alone or in combination: poly (maleic acid-styrene), poly (maleic acid-butyl vinyl ether), poly (maleic acid-propyl vinyl ether), poly (maleic acid-ethyl vinyl ether) and poly (acrylic acid-ethyl acrylate).
42. (Original) A bioadhesive composition as claimed in claim 39, characterised in that the lipid micellising polymer comprises an alternating copolymer of styrene and maleic acid.
43. (Original) A bioadhesive composition as claimed in claim 39, characterised in that the reaction mixture comprises from about 1% to about 15%, by weight of the reaction mixture, of said hydrophobic monomer.
44. (Original) A bioadhesive composition as claimed in claim 39, characterised in that said hydrophobic monomer comprises any of the following either alone or in combination: nbutyl acrylate, n-butyl methacrylate, a hexyl acrylate, iso-octyl acrylate, isodecyl acrylate, ethoxyethyl acrylate, tetrahydrofurfuryl acrylate, vinyl propionate, and vinyl butyrate.
45. (Original) A bioadhesive composition as claimed in claim 39, characterised in that the hydrophobic monomer comprises at least one of ethoxy ethyl acrylate or butyl acrylate.
46. (Original) A bioadhesive composition as claimed in claim 39, characterised in that the reaction mixture from about 3% to about 20%, by weight of the reaction mixture, of said hydrophobic polymer.

47. (Original) A bioadhesive composition as claimed in claim 39, characterised in that the said hydrophobic polymer comprises any of the following either alone or in combination:

vinylacetate dioctyl maleate copolymer or ethylene vinylacetate copolymer.

48.-51. (Canceled)

52. (Original) A biomedical skin electrode comprising a skin contactable bioadhesive, the skin contactable bioadhesive comprising a composition of claim 19.

53. (Original) A wound dressing comprising a skin contactable bioadhesive, the skin contactable bioadhesive comprising a composition of claim 19.